

**4th U.S.-China
Energy Efficiency Forum
September 25, 2013**

Compiled Presentations from Track 4, Breakout
Session 1/Morning

**Appliance and Equipment Energy
Efficiency Standards**



The Super-efficient Equipment and Appliance Deployment (SEAD) Initiative

Gabrielle Dreyfus
U.S. Department of Energy

U.S.-China Energy
Efficiency Forum
September 25, 2013



The Clean Energy Ministerial (CEM) is a high-level global forum to share best practices and promote policies and programs that encourage and facilitate the transition to a global clean energy economy.

90% of Global Clean Energy Investment

80% of Global GHG Emissions



Australia



European Commission



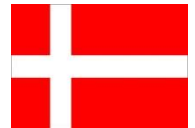
Brazil



Canada



China



Denmark



Finland



France



Germany



India



Indonesia



Italy



Japan



Korea



Mexico



Norway



Russia



South Africa



Sweden



Spain



United Arab Emirates



United Kingdom



United States



Participation in Clean Energy Ministerial Initiatives

May 2013

	AUSTRALIA	BRAZIL	CANADA	CHINA	DENMARK	EUROPEAN COMMISSION	FINLAND	FRANCE	GERMANY	INDIA	INDONESIA	ITALY	JAPAN	KOREA	MEXICO	NORWAY	RUSSIA	SOUTH AFRICA	SPAIN	SWEDEN	UNITED ARAB EMIRATES	UNITED KINGDOM	UNITED STATES	
21ST CENTURY POWER					●		●		●	■					●				●					■
APPLIANCES (SEAD)	●	●	●				●		●	■			●	●	●		●	●	●	●	●	●	●	■
BIOENERGY		■			●							●									●			
BUILDINGS AND INDUSTRY (GSEP)	●		●		●	●	■	●		●			■	●	●		●	●		●				■
CARBON CAPTURE (CCUS)	■		●	●				●	●				●	●	●	●		●	●			●	■	●
CLEAN ENERGY POLICY	■							●	●			●	●		●			●	●	●	●			■
ELECTRIC VEHICLES (EVI)				■	●		●	●	●	●		●	●					●	●	●			●	■
ENERGY ACCESS (GLOBAL LEAP)												●										●		■
HYDROPOWER		■						●							●	●								●
SMART GRID (ISGAN)	●		●	●	●	●	●	●	●	●		■	●	■	●	●	●	●	●	●	●		●	■
SOLAR AND WIND	●	●			■	●		●	■				●	●	●	●		●	●	■		●	●	●
SUSTAINABLE CITIES (GSCN)				●	●		●													●	■			
WOMEN IN CLEAN ENERGY (C3E)	●				●										●	●		●		●	●	●		■

Non-CEM governments, nongovernmental organizations, and private businesses also participate in selected initiatives.

■ Lead ● Participant



SEAD accelerates the pace of market transformation for energy efficient products



Awards

Showcase leadership in energy efficiency

Incentives

Increase demand for energy efficient products

Procurement

Lead by example, with tools & best practice

Standards & Labels

Ensure energy efficiency performance

Technical Analysis

Provide foundation for policy success

Technical Assistance

Support implementation



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Provide foundation for policy success

Policies adopted since 2010 will save 600 TWh per year by 2030

Additional 1,500 TWh potential annual savings by 2030

Additional potential savings of USD \$1 Trillion over 2010-2030



SEAD Global Efficiency Medal

Awards

Showcase leadership in energy efficiency

Realize greatest savings potential

Increase market share

Spur innovation

Support test method harmonization

Build test lab capacity

Complement Standards and Labeling policies





Awards SEAD Global Efficiency Medal

Competition Round 1:

- Energy-efficient flat-panel televisions
- Winning products: Samsung and LG

Competitions Rounds 2 and 3:

- Display (winning products Samsung, LG, Acer) and Motors (launched June 3rd).

Competition Round 4:

- Solid state lighting planned for 2014





Awards

SEAD Lighting Products Competition

- 6.5% of primary energy globally, 16% of end-use electricity
- Savings potential: 939 TWh/year, equivalent to consumption of India and Mexico, or 5% global electricity consumption (*Source: UNEP en.lighten*)
- Distinction between lamps and luminaires is blurring
- Solid-state Lighting
 - May eliminate replacement lamps
 - Has long life
 - Allows small scale businesses
 - Many incentives exist





SEAD Incentives

Incentives

Increase demand for energy efficient products

Foundational Resources

Policy implementation tools

Informing policy design

Sharing best practice

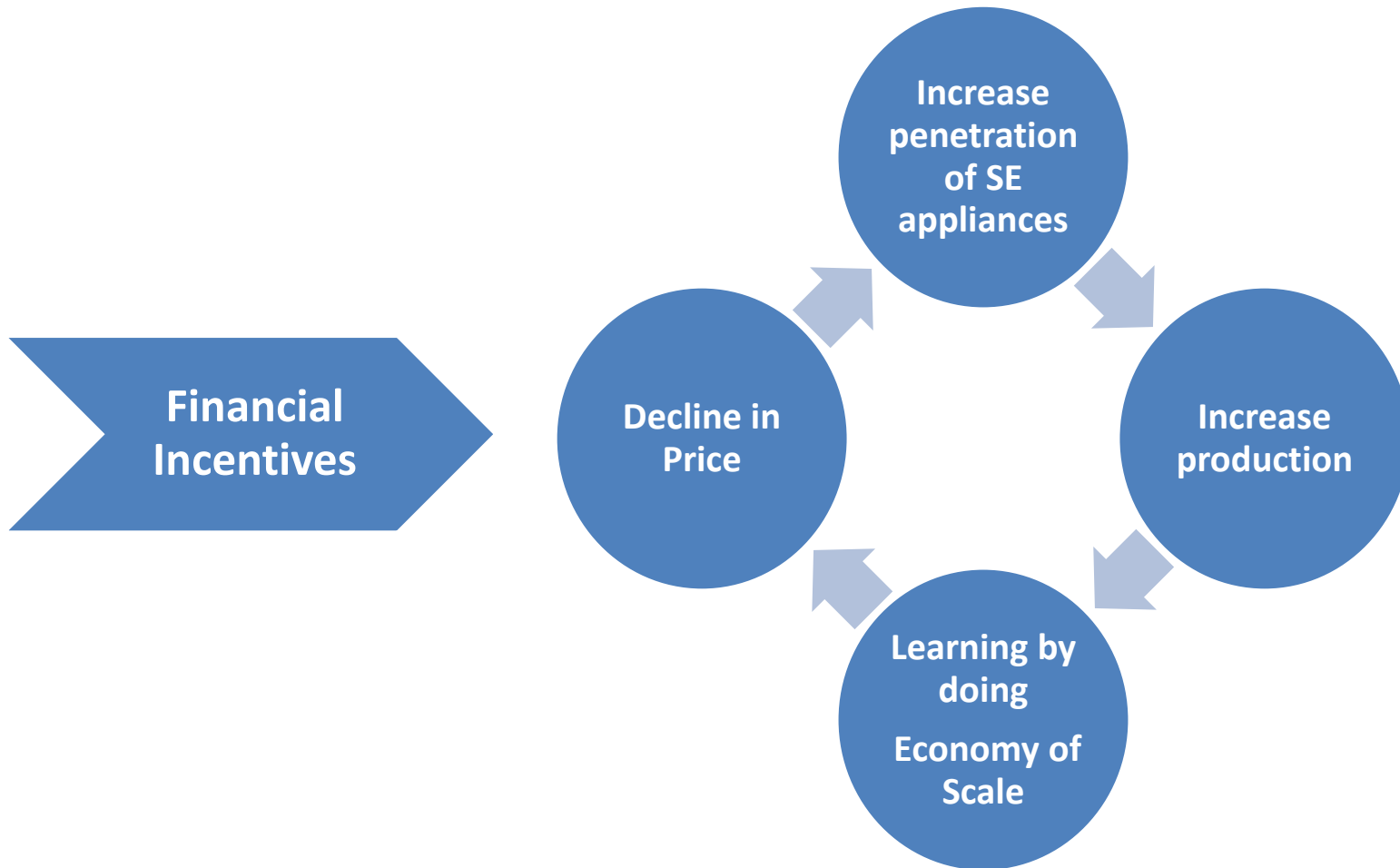
Efficient Product Promotion Collaborative

Use incentives as supporting policy





Virtuous Circle of SE penetration





Incentives

Resources

- Incentive Design Library (IDL) uses case studies to illustrate different types of financial incentive programs
- Incentive program design using the LBNL Energy Efficiency Revenue Analysis (LEERA) model
 - LEERA quantifies self-financing revenue in subsidized electricity markets and estimates the efficiency improvement potential for specific appliances
- Efficient Product Promotion Collaborative is a forum for broader stakeholder engagement



SEAD Procurement

Procurement

Lead by example, with tools & best practice

Inform GPP programs

Accelerate implementation

Develop resources

Incorporate LCC and EE criteria in specs

Share best practices

Build procurement network





Procurement

- Street lighting: represents ~0.9% of global electricity consumption
- SEAD is supporting municipalities in the transition to energy efficient street lighting in Canada, India and Mexico through the development and deployment of the SEAD Street Lighting Tool available at:
www.superefficient.org/sltool
- Published “SEAD Guide for Monitoring and Evaluating Green Public Procurement Programs”
- Partnering with the European Commission’s Green Public Procurement Program to provide a webinar-based training on key findings from *Energy Efficient Public Procurement: Best Practice in Program Delivery* and *SEAD Guide for Monitoring and Evaluating Green Public Procurement Programs* on September 18th and 25th.



SEAD Standards & Labeling

S & L

Accelerated cost-effective savings
with efficient use of resources

Leverage knowledge, data & tools

Test standardization activities

Community of peers

S&L product tool-kits

Increase involvement and scope

Resources and policy recommendations





Peer-to-Peer Collaborations Foster Information Exchange to Support S&L Policies

Product collaborations:

- Commercial refrigeration
- Computers
- Distribution transformers
- Efficient lighting
- Motors
- Network standby
- Televisions

Thanks in part to SEAD-facilitated technical exchange, **India** became the first country to comprehensively regulate the performance, safety, and quality of light-emitting diodes (LEDs), which could save as much as 250 MT CO₂ over 2015-2030.





S&L

Product collaborations

- Keeping up with emerging technologies
 - New study examines 3D TV energy usage
 - “Real world usage” of networked standby
- Getting to comparable test methods and metrics
 - Distribution Transformer
 - Commercial refrigeration
- Working with IEA-4E annexes
 - Coordination on Mapping & Benchmarking, joint networked standby meeting, EMSA bridge, SSL liaison
- S&L Community of Practice (CoP)
 - Collaboration between SEAD, IEA, and IEA-4E
 - Improve cooperation in international product test standards development (e.g., engaging with IEC and ISO)



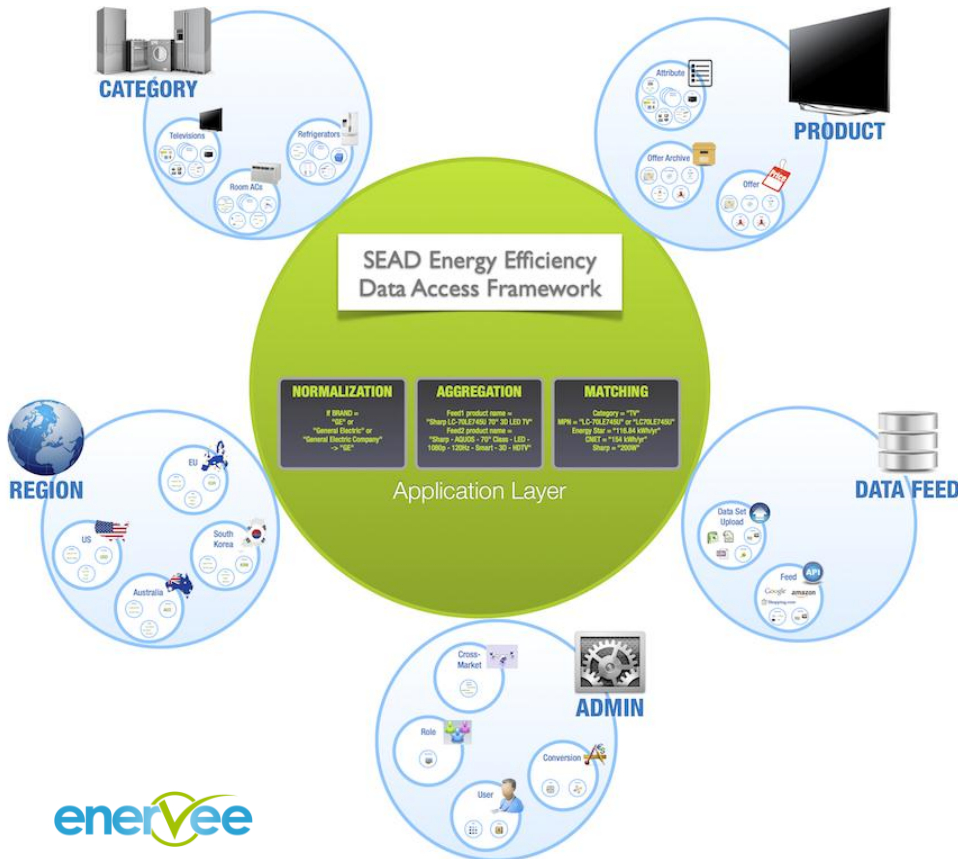


S&L

Data Access Framework

Data Framework makes it possible to:

- Link products to energy performance registries
- Benchmark products across markets
- Monitor efficiency of products on market and pricing trends





SEAD Technical Analysis

Technical Analysis

Assess cost-effective efficiency improvement potential

Country focused analysis

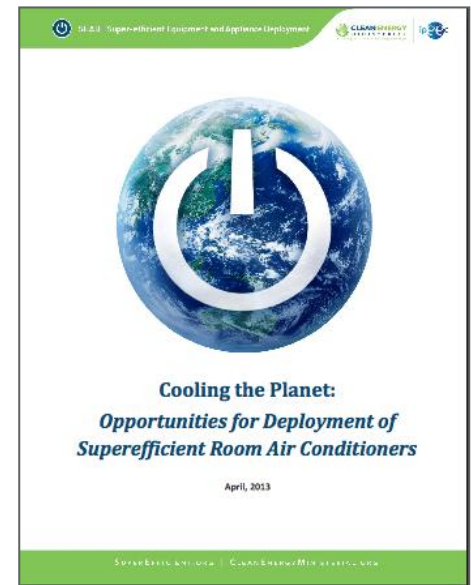
Global analysis

Inform S&L policies

S&L analysis tools

Analysis of SEAD impacts

Inform other WGs

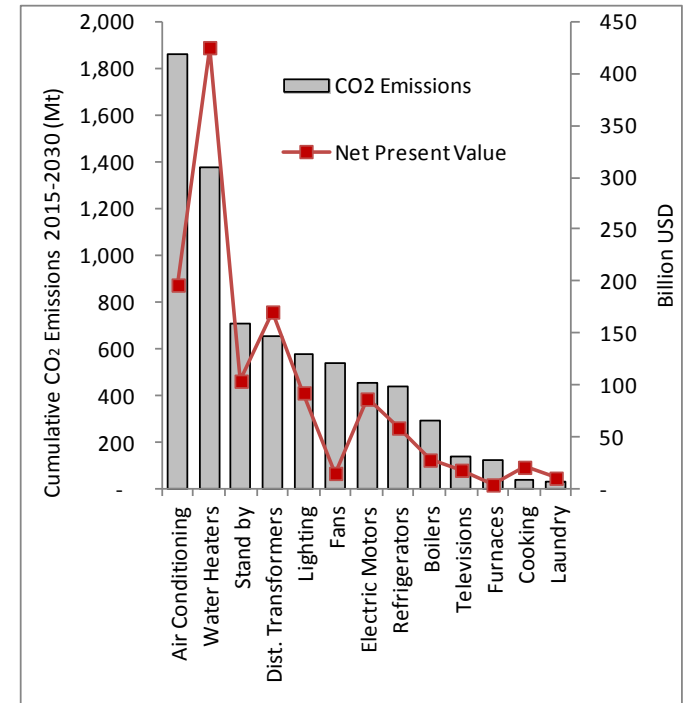




Technical Analysis

SEAD Analysis Tools & Resources

- **Global S&L techno-economic analyses**
 - Energy saving opportunities for specific products
 - Available: TVs, **Ceiling Fans, Room ACs, Displays**
 - In development: residential refrigerators
- **S&L modeling tools**
 - Given a set of efficiency policy options, the **Bottom-Up Energy Analysis System (BUENAS)** models national energy savings and related impacts, as well as national financial impacts.
 - **Policy Analysis Modeling System for Minimum Energy Performance Standards (PAMS-MEPS)** is a single-appliance analysis tool (in Excel format) that is pre-loaded with default macroeconomic and technology parameters to calculate optimal MEPS targets.



Potential cumulative CO₂ and consumer savings for SEAD participating governments in the BUENAS cost-effective potential scenario. (LBNL 2012)

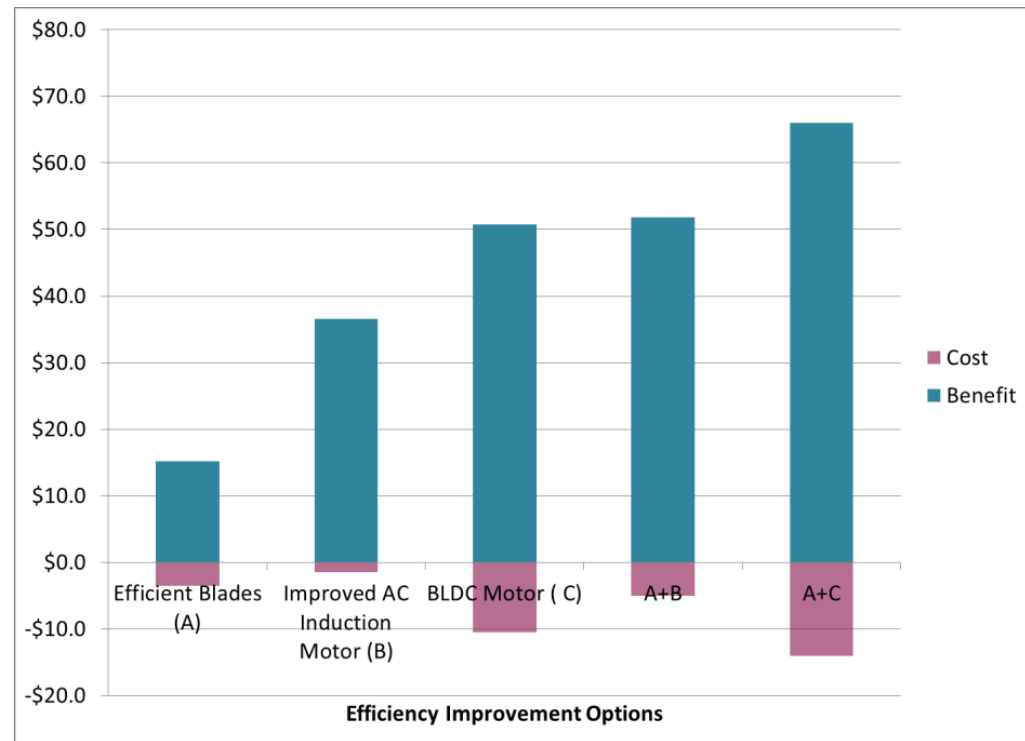


Technical Analysis

SEAD Techno-economic Analyses

Super-efficient Ceiling Fans

India designed the Super Efficient Equipment Program (SEEP), an innovative program to provide incentives for the production of ceiling fans that are twice as efficient as the average fans currently on the market. SEAD provided the technical analysis that showed the potential to **cost-effectively double the energy efficiency** of ceiling fans.



Assumptions: Discount Rate =2%, Lifetime=10 years, Electricity Tariff =\$0.10/kWh



Any questions?

THANK YOU!



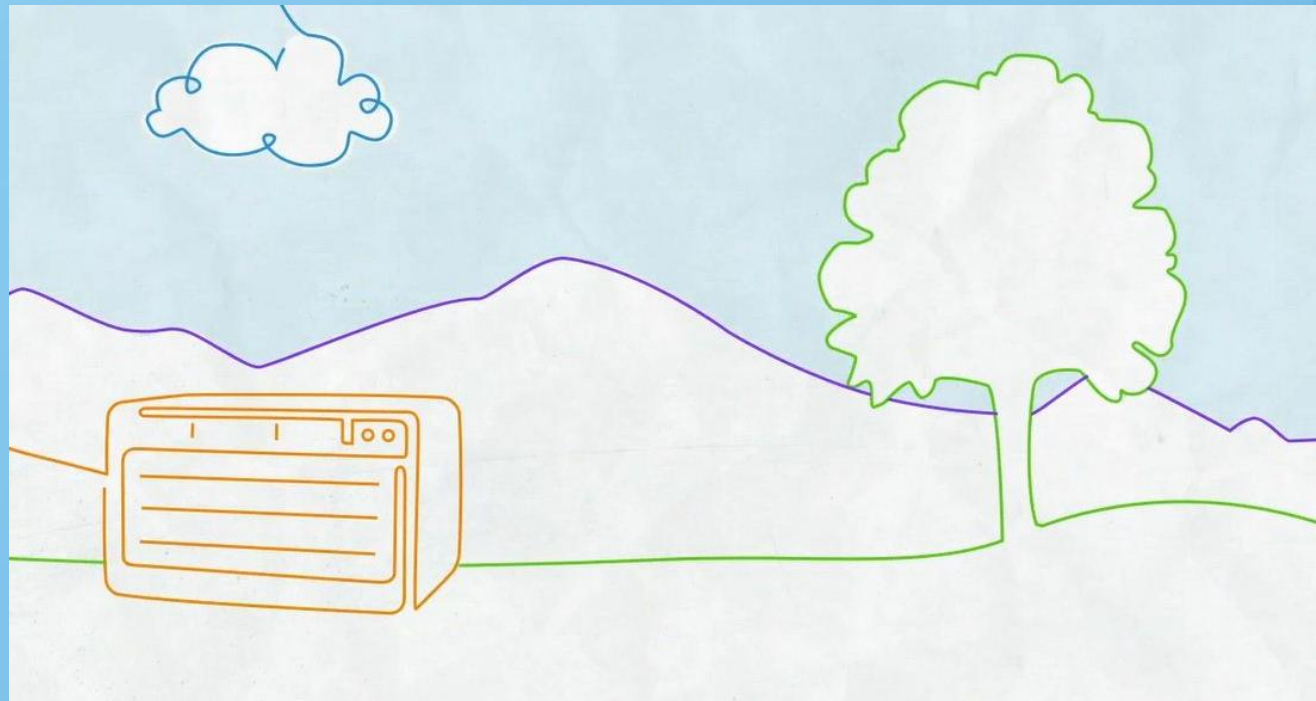
Energy Efficiency Opportunities: China 2013

Steven Zeng
China Program Director, CLASP

4th U.S.-China Energy Efficiency Forum
Sheraton Pentagon City Hotel
Washington D.C.
September 25, 2013

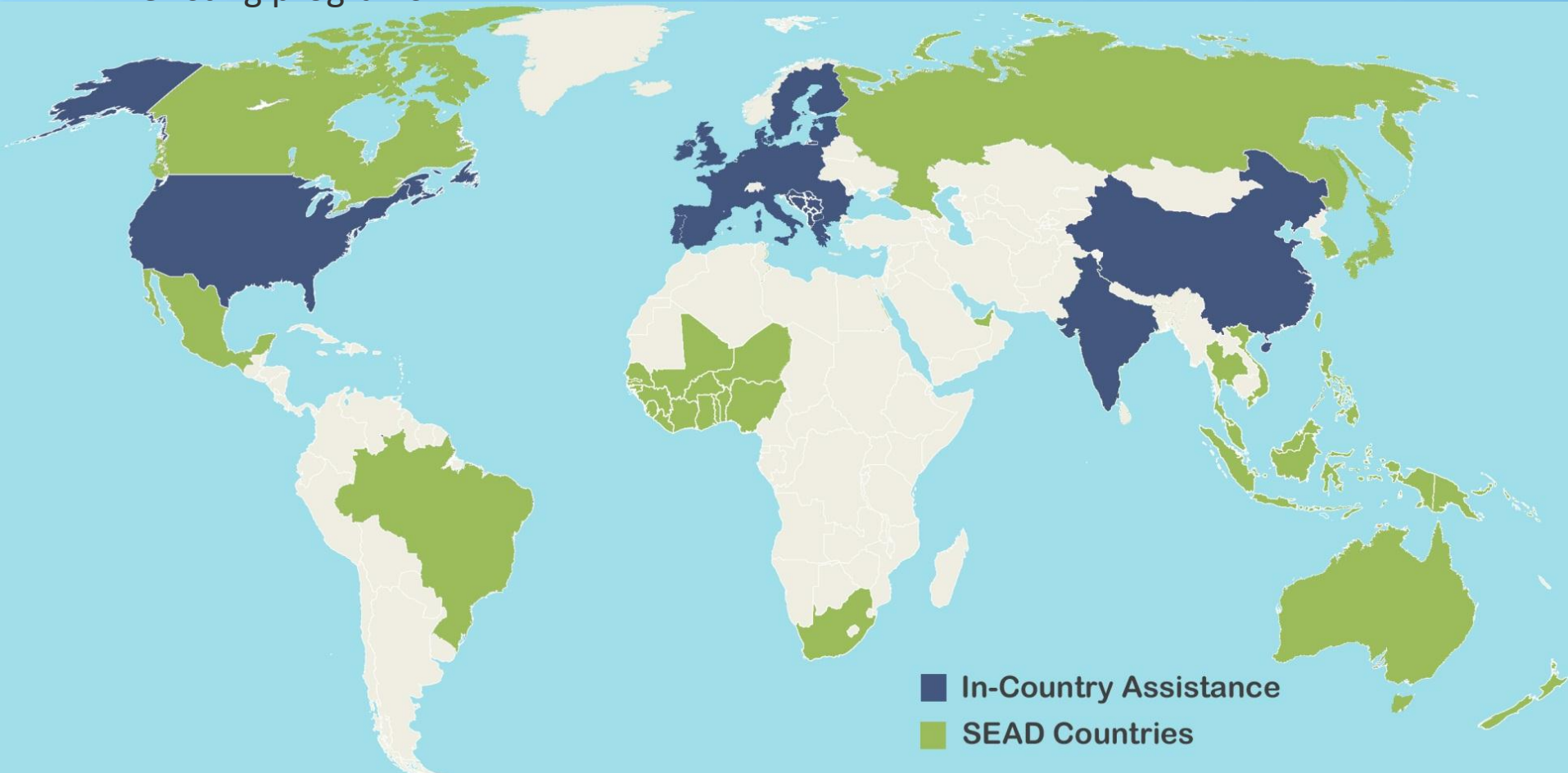
- **CLASP improves the environmental and energy performance of the appliances and appliance systems we use every day, lessening their impacts on people and the world around us.**
- **CLASP develops and shares practical and transformative policy and market solutions in collaboration with global experts and local stakeholders.**

We are the leading international voice and resource for energy efficiency standards and labeling (S&L) for commonly used appliances – including air conditioners.



CLASP's programs and activities range from local to regional to global

- CLASP works on the ground, policy by policy, and also convenes global decision-makers to catalyze transformative action.
- Since 1999, CLASP has worked in over 50 countries on 6 continents pursuing every aspect of appliance efficiency – from helping structure new policies to evaluating existing programs.



- **China is the world's largest producer and consumer of household appliances**
- **China aims to reduce the energy intensity of its economy by 40-45% by 2020 from 2005 levels.**
- **Since 1989, in the appliance sector, China has developed and implemented over 40 energy efficiency (EE) standards and over 20 mandatory energy labels;**
- **CLASP's technical research comprises development and revision of MEPS; monitoring, verification and enforcement of S&L; and market transformation towards higher energy efficiency products.**

1. Market Analysis of China Energy Efficient Products (MACEEP)

- This study is to collect market data to compare the market distribution of energy-efficient products with existing EE tiers.

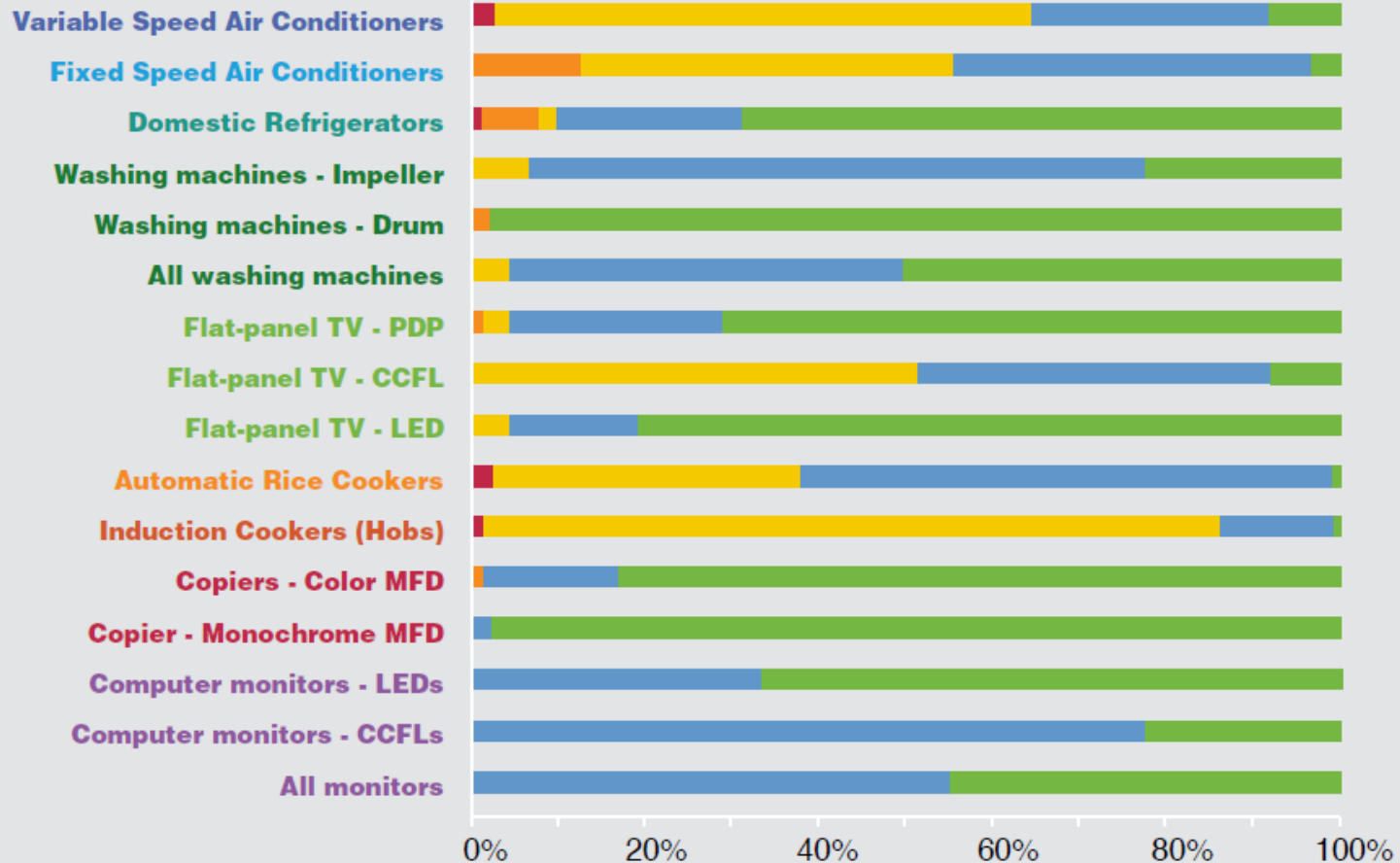
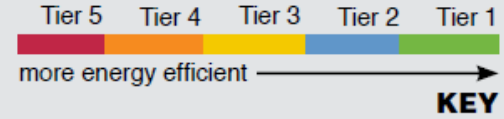
2. Energy Savings Potential analysis

- This study analyzes energy saving potential of various products in the market and provides evidence-based recommendations on what products should be prioritized for policy revision.

3. Benchmarking of Energy Efficiency Standards


- These studies examine national standards from other countries and compare these with Chinese standards.


Tiers/Incentives



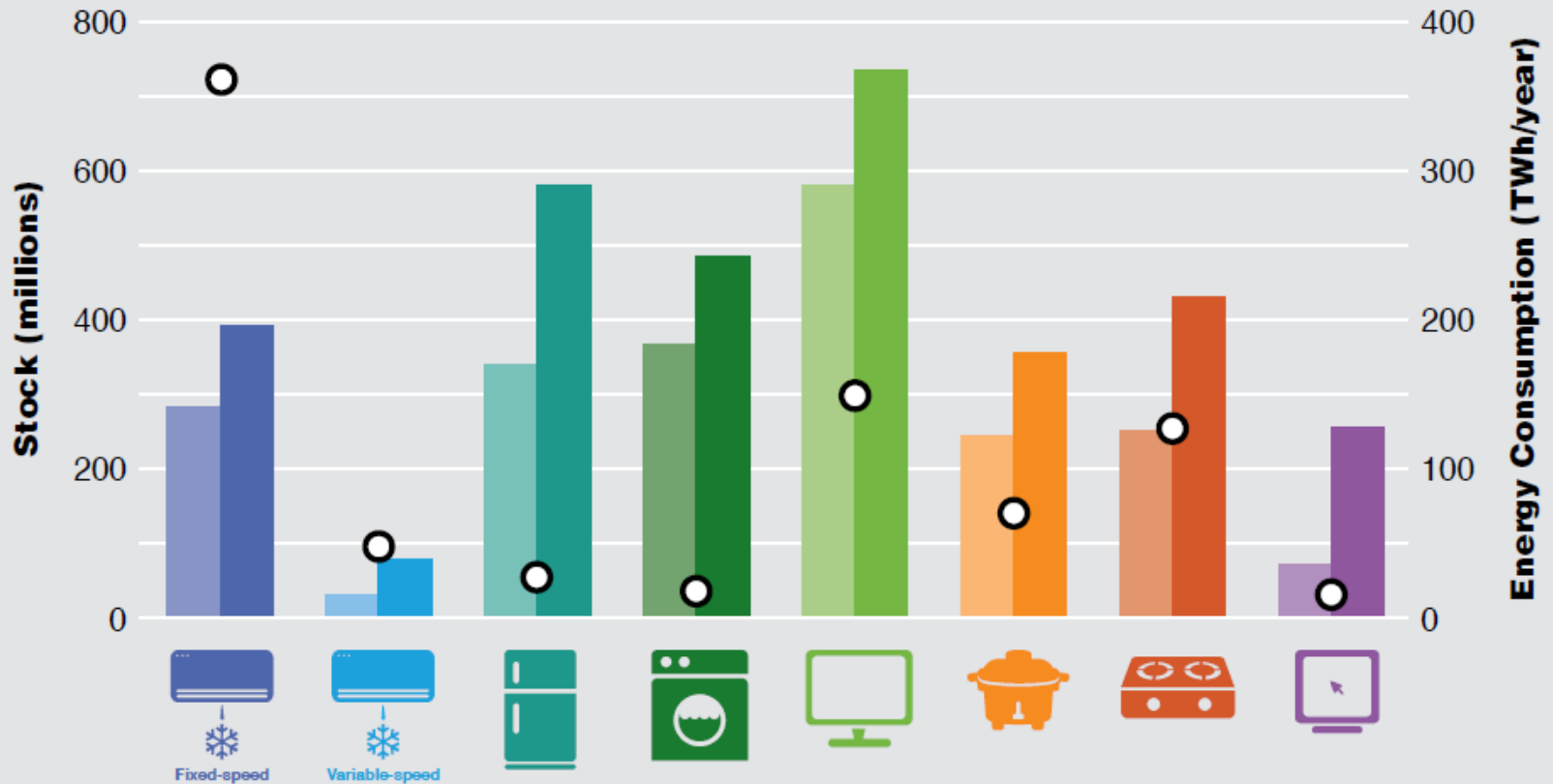
The Market

2030 projected energy consumption, business as usual 

2012 stock 

2030 projected stock 

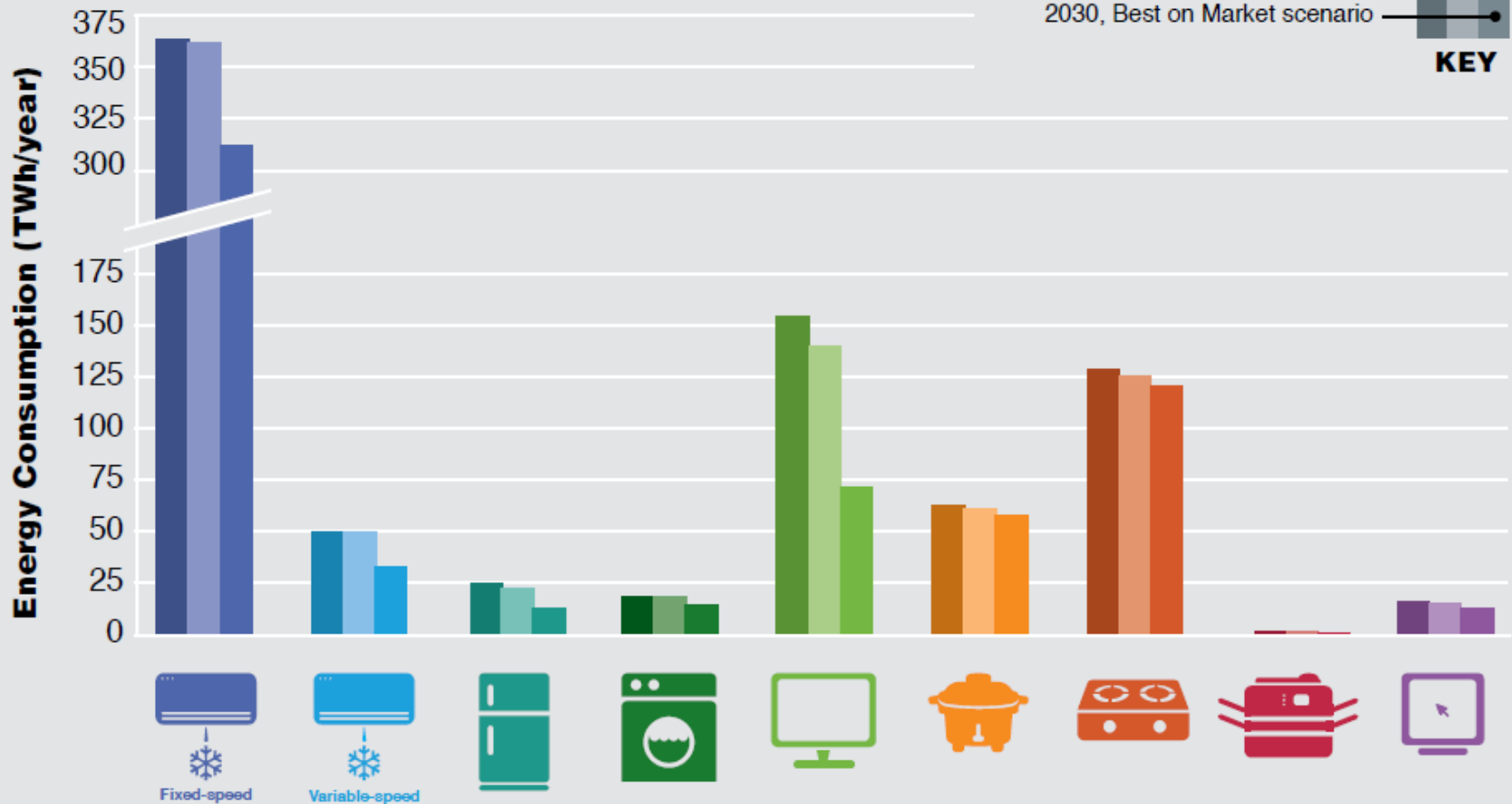
KEY



Annual energy consumption

2030, business as usual
 2030, MACEEP scenario
 2030, Best on Market scenario

KEY

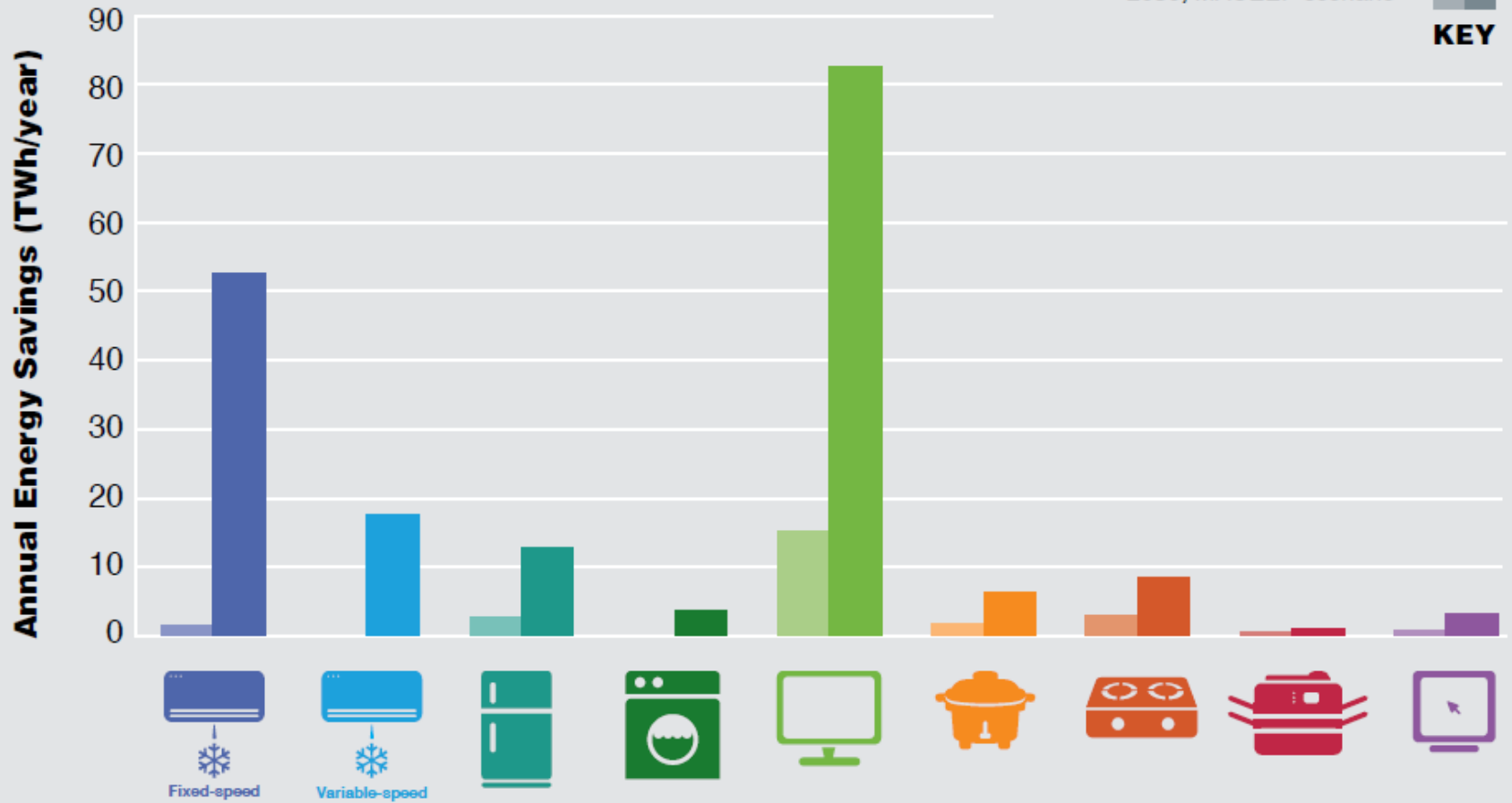


The energy savings potential

2030, Best on Market scenario

2030, MACEEP scenario

KEY



- 1. By using the most efficient technologies currently available in Chinese market, China can save 187 terawatt hours per year, which is twice the energy 'Three Gorges' hydropower plant generates annually.**
- 2. A cumulative electric energy saving of 269 TWh by 2030 can be achieved by implementing policy options immediately feasible.**
- 3. Very large potential energy savings are from revision to the policy for fixed speed air conditioners (52 TWh/year). However, the potential energy savings in 2030 are three times larger – over 160 TWh/year – if EE standards were to incorporate a transition from fixed speed to variable speed air conditioners.**

- 4. The potential energy savings from electric storage water heaters in the Best on Market scenario is about equivalent to rice cookers (7 TWh/year). However, a market transformation to heat pump water heaters – a much more energy-efficient technology – would result in huge potential energy savings of about 250 TWh/year.**
- 5. For some of the product categories, a dominating share of the product models are in the highest efficiency class 1. This results in the lack of market differentiation of the most efficient products, as well as the lack of incentive for higher efficiency product development.**
- 6. The prioritized appliances for EE improvement are fixed speed air conditioners, variable speed air conditioners, televisions, refrigerators, hobs, and rice cookers.**

Thank you

Steven Zeng

China Program Director

szeng@clasponline.org

www.clasponline.org

Current Situation and Application of Energy-saving Products Certification in



China Quality Certification Centre

Wang

Zhigang

Content

1. China' s Energy-Saving Product Promotion Policy
2. Current Situation of Energy-Saving Product Certification in China
3. Application of Energy-Saving Product in China
4. Development Outlook on China' s Energy-Saving Product Certification

China Energy-Saving Product Promotion Policy

Multi-approaches are adopted in China to promote Energy-saving Products , including (but not limited to)

- Publicity and education to improve public awareness
- Energy efficiency Standard
- Energy efficiency labeling
- Product certification
- Government procurement
- Subsidy
- Tax policy



China Energy-Saving Product Certification Status



Legal Basis

- The Article 20 of the Energy Conservation Law issued on 1 April, 2008: Producers and sellers of energy-consuming products can apply for energy conservation certification on a voluntary basis according to relevant regulations to the institutions which must be accredited by certification and accreditation administration department of the State Council to specialize in energy conservation certification.
- The Article 13 of the Cleaner Production Promotion Law issued on January 1, 2003: Relevant administrative departments of the State Council may need to approve the establishment of energy, water, waste recycling and other environmental product logo and develop appropriate standards in accordance with national regulations.

China Energy-Saving Product Certification Status

Policy Support:

- The Article 18 and Article 19 of Certification and Accreditation Regulation which came into force on 1 November, 2003 raises relevant requirements on energy and water conservation certification.
- The Article 25 in Decision of the State Council on Strengthening Energy-Conservation Work which came into force on 6 August, 2006: develop voluntary Energy-saving Products certification, better regulate the code of conduct in the field, expand certification scope, and establish globally coordinated mutual recognition.
- It is required in Opinion on Further Strengthening Resource-saving Product Certification Work which came into force on 27 December, 2007 that it is of priority to establish a voluntary product certification system in areas of electricity, water and oil conservation as well as renewable resources implemented by government.

China Energy-Saving Product Certification Status

- **Implementing agency**

China Quality Certification Centre

- **Certification model**

Product Inspection + Factory inspection +
Supervision after inspection

- **Certification mark**

e and deformed Chinese character “节” stands
“EC” ;

n is the low part of character “节” and also the first
letter of Chinese pinyin alphabet for ‘能(energy)’

C stands for China; The Great Wall is the symbol of
China;

The color blue means returning blue to sky and
ocean by energy conservation



China Energy-Saving Product Certification Status

- **Area of certification**

Energy-saving Products Certification : Home appliance, office equipment, machinery, lightening, electric power, new energy, building energy conservation

Water-saving product certification : Industry, agriculture, urban life, the use of non - traditional water resources

- **Certification Type**

Energy-saving product certification has more than 75 categories of products

Water-saving product certification has more than 25 categories of products

- **Certification scale**

Thousands of enterprises about more than 50,000 models get energy saving product certification.

China Energy-saving product certification support Policy— Energy-saving products in government procurement

Policy basis

- The article IX of Government Procurement Law : Government procurement should be supportive the achievement of national economic and social development policy objectives, including the protection of the environment.
 - April 1, 2004,the State Council on resource conservation activities of the notice: Requires the State Development and Reform Commission, Ministry of Finance and the State Administration of Taxation study the formulation of financial, taxation, prices and other incentive policies, requiring governments at all levels to support resource conservation and comprehensive resource utilization, and put energy-saving, water-saving equipment (products) into the government procurement catalog.
-
-

China Energy-saving product certification support Policy— Energy-saving products in government procurement

Policy released

- December 17, 2004 the Ministry of Finance and the National Development and Reform Commission issued the "energy-saving products in government procurement implementation of views "
- July 30, 2007 the State Council issued "on the establishment of government procurement of energy saving products mandatory notification system"

China Energy-saving product certification support Policy— Energy-saving products in government procurement

Energy-saving products in government procurement list:

- Issued by: National Development and Reform Commission, Ministry of Finance;
- released Frequency: Twice a year;
- Basic conditions: access to energy certification, stable supply;
- In the 14th "energy-saving products in government procurement list" ,Involving 26 kinds of level-four items 52 kinds of products, nearly 600 enterprises, nearly 30,000 Model / Series;
- Mandatory Purchase: computer equipment, input and output devices, refrigeration and air conditioning equipment, ballasts, life appliances (air conditioners, electric water heaters), lighting equipment, television equipment, video equipment, toilet, faucets involving a total of nine level four items, 25 products.

Energy-saving products in government procurement list template

附件一：

节能产品政府采购清单

一、节能产品类

1、★空调机

制造商	品牌	产品型号	节能标志认证证书号	节能产品认证证书有效截止日期
青岛海尔空调器有限公司	海尔 Haier	KFRd-27GW/V (ZXF)	JD02-0581-2004	2008-8-19
		KFR-27GW/Y	JD02-0582-2004	
		KFR-32GW/Y (ZXF)	JD02-0583-2004	
		KFR-32GW/Y	JD02-0584-2004	
		KFRd-35GW/V (ZXF)	JD02-0585-2004	
		KFR-35GW/Y	JD02-0586-2004	
		KFRd-50LW/V (ZXF)	JD02-0587-2004	
		KFRd-50LW/V	JD02-0588-2004	
		KFRd-60LW/V (ZXF)	JD02-0589-2004	
		KFRd-60LW/V	JD02-0590-2004	
		KFRd-71LW/V (ZXF)	JD02-0591-2004	
		KFRd-71LW/V	JD02-0592-2004	
				KFRd-27GW/R(QXF)、KFRd-50LW/R(QXF)、KFRd-35GW/R(QXF)
广东志高空调有限公司	志高 CHIGO	KF-28GW/G(A50A)、 KF-28GW/G(A51A)、		

注：《节能产品政府采购清单》中的所有产品均为2007年10月01日前认证。

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China Energy-saving Product Certification Support Policy - financial subsidies

Energy-Saving Product Helping People Project:

- Through financial subsidies for energy efficiency rating to level-one or more than level-two (Note: There are energy efficiency standards), such as air conditioners, refrigerators, flat-panel TVs, washing machines, motors and other energy efficient products in 10 categories should be promoted.
- Policy: May 18, 2009, the Ministry of Finance and Reform Commission officially announced the "Ministry of National Development and Reform Commission for launching the" energy-saving products Waste Management Project "notice", to take financial subsidies to accelerate the promotion of energy efficient products, while effective expanding domestic demand, especially consumer demand, on the other hand to improve energy efficiency in end-use products.
- In the period, "energy efficient products and extension of financial subsidies for Interim Measures."

China Energy-saving Product Certification Support Policy - financial subsidies

Energy-Saving Product Helping People Project:

- 2012, the central Ministry of Finance organized a total of 35 billion yuan subsidies to promote energy-saving products energy-saving lamps, energy efficient cars, energy efficient flat-panel TVs, washing machines, water heaters, air conditioners, refrigerators, desktop computers a total of eight categories of consumer products as well as efficient motors, fans, pumps, compression machines, transformers of five major categories of industrial products, making the "Energy-Saving Product Helping People Project" a policy platform which is expanding consumption, transfer structure, transfer mode, promote energy-conservation, benefit people's livelihood

China Energy-saving Product Certification Support Policy - financial subsidies

The following project accepted energy-saving certification results :

Efficient lighting products subsidy program

Energy-Saving Product Helping People Project-High efficiency air conditioner

Energy-Saving Product Helping People Project- Efficiency motors

Energy-Saving Product Helping People Project- High efficiency distribution transformers

Energy-Saving Product Helping People Project- High efficiency water pump

Energy-Saving Product Helping People Project- Displacement air compressors

Energy-Saving Product Helping People Project- High efficiency ventilators

China Energy-saving Product Certification Support Policy - financial subsidies

Energy-Saving Product Helping People Project- High efficiency desktop microcomputers

Energy-Saving Product Helping People Project- High efficiency household refrigerators

Energy-Saving Product Helping People Project- High efficiency electric washing machine

Energy-Saving Product Helping People Project- High efficiency household gas water heater (or)

Energy-Saving Product Helping People Project- High efficiency flat-panel TV (or)



China Energy Conservation Product Certification

Support policies - tax incentives

- **Energy-saving and water-saving equipment investment tax incentives**

“Enterprise Income Tax Law” stipulates that , Enterprises which purchased and actual use “Environmental preferential corporate income tax special equipment catalog” , “ Energy-saving and water-saving equipment enterprise income tax preferential Directory ”and “Safety equipment enterprise income tax Directory ” can use those policies, which required the special equipment of environmental protection, energy saving, the 10% of the amount invested from the business year can be credited against the tax payable; when insufficient credit available in the five tax years after the end transfer credits.

China Energy Conservation Product Certification

Support policies - tax incentives

- **Energy-saving and water-saving equipment enterprise income tax preferential Catalogue (2008 Edition)**

No.	Equipment category	Equipment Name	Performance Parameters	Applications	Energy efficiency standards
1. Energy-saving equipment					
1	Small three-phase motor	Energy-saving Small and Medium-phase asynchronous motor	Voltage 660V and below, rated power 0.55kw ~ 315kw range, single-speed closed-cooled, N design of general purpose, explosion-proof electric motors, energy efficiency should not less than indicators evaluation value	Industrial production of electricity led	GB 18613-2002

China Energy-saving Product Certification Development Outlook

- ❖ Gradually expand the scope of certification
- ❖ Certification model changes and more responsive to market demand for products
- ❖ More stringent certification standards
- ❖ More relevant national policy support
- ❖ Coordination of mutual recognition of certification results is a big trend

Thanks for your attention!

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Zhigang

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Using less. Doing more.

Regional Cooperation on Appliance and Building Efficiency

Fourth U.S.-China Energy Efficiency Forum

25-26 September 2013

Brian T. Castelli, Senior Fellow, Alliance to Save Energy

What is the Alliance to Save Energy?

Mission:

- To promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security.

Organization:

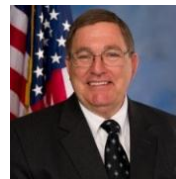
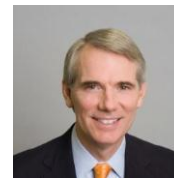
- Staffed by 60+ professionals
- 35 years of experience
- \$17 million annual budget
- Recognized as a premier energy efficiency organization
- Active in policy advocacy, research, education and communication
- 140+ organization Members in all economic sectors



Using less. Doing more.

What is the Alliance to Save Energy?

- Nonprofit organization headquartered in U.S.; operations worldwide
- Led by **Senator Mark Warner (D-Va.)** and **Tom King, Chairman of the Board and President, National Grid US**
- Board includes 16 Members of Congress – Bi-Cameral, Bi-Partisan



Using less. Doing more.

Asia-Pacific Regional Projects

- APEC Peer Review on Energy Efficiency (PREE)
- **APERC Cooperative Energy Efficiency Design for Sustainability (CEEDS) project**
- Lead EE Contractor on USAID five year Vietnam Clean Energy Program
- APEC EE transportation projects
- APEC Building Codes Survey
- Watergy training for APEC economies (Vietnam 2010)

APEC CEEDS

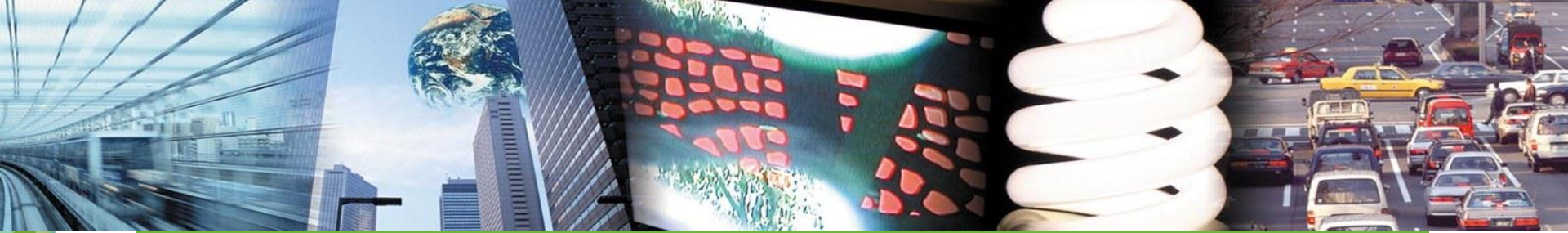
- The Alliance to Save Energy has worked with the [Asia Pacific Energy Research Centre \(APERC\)](#) to carry out the Cooperative Energy Efficiency Design for Sustainability (CEEDS) program. CEEDS is designed to help developing APEC economies design and implement measures for achieving energy efficiency improvements in a specified sector.
- For each sector of focus, high-level delegates from five or six developing APEC economies participate in a series of two CEEDS workshops with international experts to explore how best practice measures can be implemented in their economies.
- Between the two workshops, the delegates take steps to carry out the guidance received at the first workshop; they report their progress at the second workshop.
- Sectors covered to date: **EE Standards and Labels, Building Energy Codes, EE Passenger Transport, and Energy Service Companies (ESCOs)**

APEC CEEDS

- Phase 1 focused on **energy-efficiency standards and labeling programs for appliances and office equipment**. Two workshops—in Taipei (October 2009) and Tokyo (March 2010)
- Phase 2 focused on **building energy codes**. Two workshops—in Bangkok (September 2010) and Hong Kong (January 2011)
- Phase 3 focused on **energy-efficient passenger transport**. Two workshops - in San Francisco (September 2011) and Singapore (January 2012)

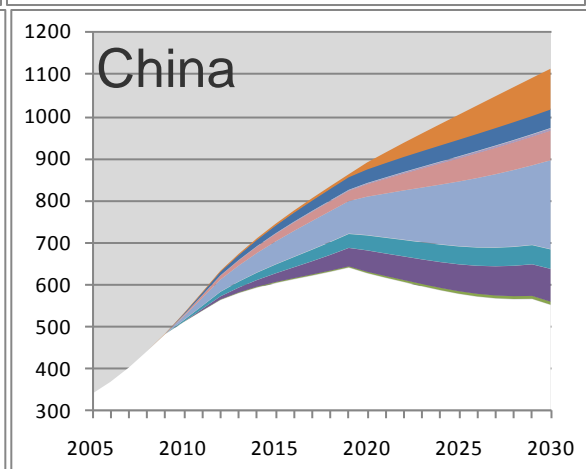
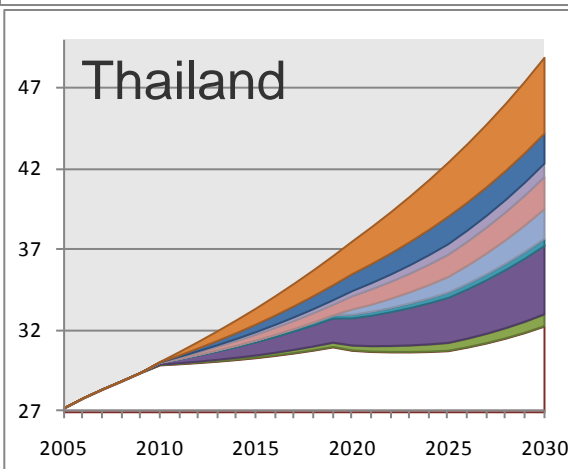
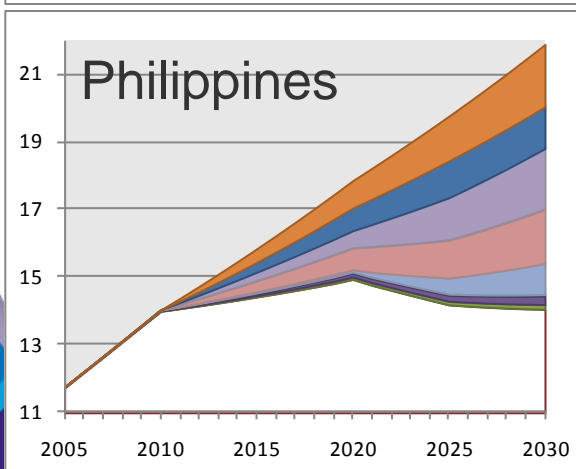
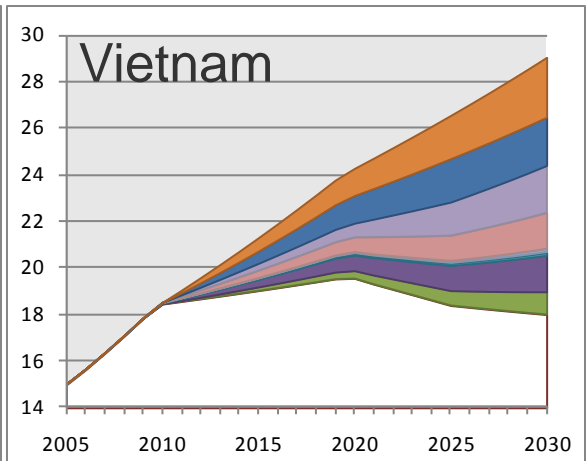
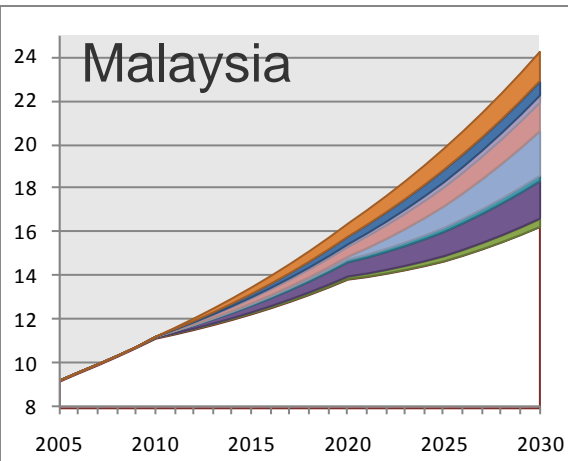
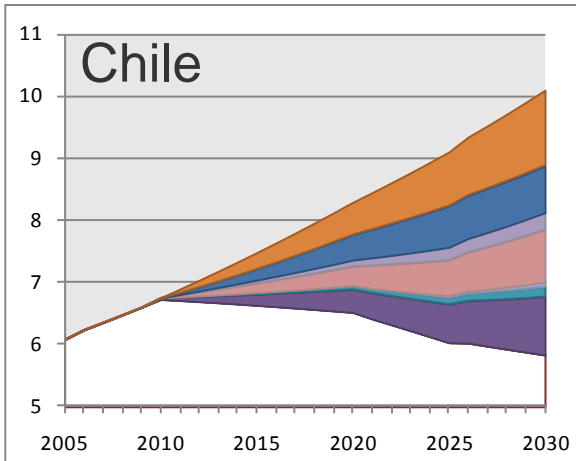
Why Appliance Standards & Labels?

- Huge potential for cost-effective energy & carbon savings
- Rapid growth in appliance purchasing in APEC economies
- Linkage to other policies
 - Incentives
 - Building Energy Codes
 - Government purchasing, etc.

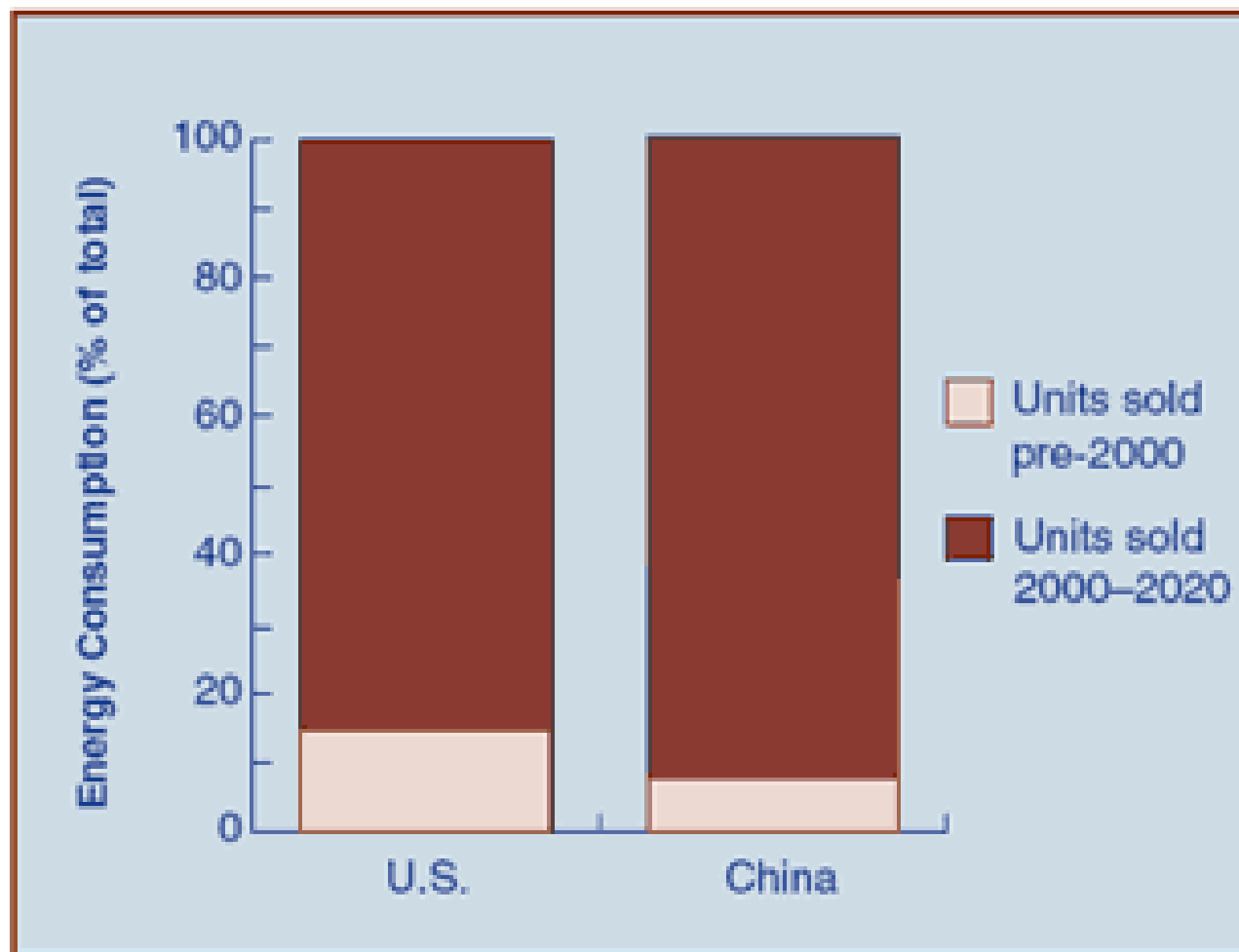


■ Refrigeration
 ■ TV
 ■ Fan
 ■ Standby
 ■ SpaceCooling
 ■ Laundry
 ■ IncandescentLamps
 ■ FluorescentLamps
 ■ Efficiency Case Demand

TWh Electricity Demand



Most Appliances & Equipment in Use in 2020 Have Not Yet Been Manufactured!



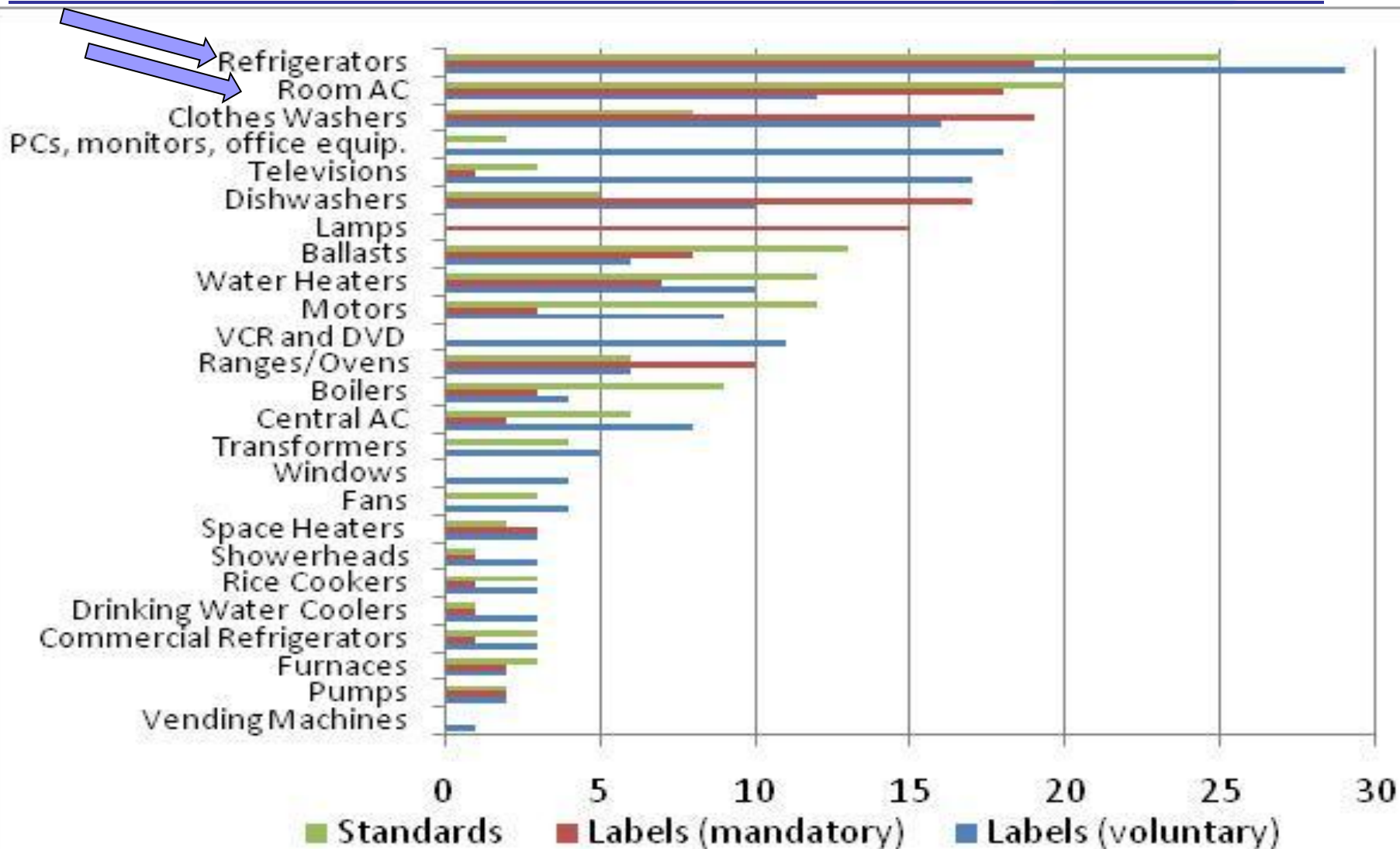
Source: CLASP

Which Products Do Economies Most Often Choose for S&Ls?



ALLIANCE TO
SAVE ENERGY

Creating an Energy-Efficient World



CEEDS S&L Workshop Results

- Complementary Programs
 - Incentives (consumers + manufacturers), government procurement, building codes
 - Others: Early retirement, retrofit programs, “sustainable furnishings”
- Supply-chain relationships to advance S&L?
 - Will global exporters support harmonized testing (and MEPS)?
 - Can large firms (or coalitions) drive B-to-B buyer demand for efficient/labeled products?
 - How to include “upstream energy efficiency” in GHG Scope 3 criteria?

New or Different S&L Program Strategy

- Phased-in MEPS and updating (“dynamic” S&L)
 - “Continuous improvement” expectations in the market
 - Voluntary label ⇒ mandatory label ⇒ MEPS
 - Categorical standards provide the path to future improvements (today’s 5-star is tomorrow’s 4-star)
- Importance of “top end” performance level
 - e.g., Thailand HEPS, EnergyStar “superstar,” TopTen
 - Recognition (award, label, etc.)
 - Incentives (consumers, manufacturers)

New or Different

- Capacity-building: Priorities
 - 1) Data gathering & analysis, priority-setting
 - 2) Test lab personnel
 - 3) Setting/updating MEPS levels
 - 4) Evaluating impacts
- Capacity-building: Methods
 - Tailor large-economy strategies for smaller economies
 - Hands-on training (“coaching”)
 - E-learning (or “mixed” approach)
 - Peer-to-peer collaboration

Areas for Regional Cooperation and Action

- “Single-economy action increases costs; regional action reduces costs!”
 - *Yamina Saheb, CLASP*
- Networking: Advice & information-sharing
 - CLASP website
 - Staff exchanges among economies
- Test standard harmonization
 - Link to other APEC Standards Harmonization (SCSC)

How do Building Codes Relate to Appliance S&L?

- Both are high-leverage & cost-effective
- Equip. S&L makes code compliance easier
- Code provisions create demand for S&L
- “Staged improvement” model applies to both codes and S&L
 - Innovation leading the way
 - Information/labeling, incentives, etc. to make Best Practice into Standard Practice
 - Mandatory requirements remove least efficient practices

How Can Appliance S&L and Building Codes help Address Ozone Depletion Issues?

- Need to replace HCFCs with HFCs
- Link to EE standards:
 - Refrigerator and A/C standards (new refrigerants)
- Link to Building Codes:
 - Efficient new buildings and major renovations use low ODP appliances and equipment

Thank You!